



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII  
901 N. 5TH STREET  
KANSAS CITY, KANSAS 66101

20 MAR 2000

Commander  
Memphis District Corps of Engineers  
ATTN: CEMVM-PM-E  
167 North Main Street, B-202  
Memphis, Tennessee 38103-1894

OFFICE OF  
THE REGIONAL ADMINISTRATOR

Dear Colonel Krueger:

RE: Review of Draft Supplemental Environmental Impact Statement (DSEIS) Flood Control, Mississippi River & Tributaries St. Johns Bayou and New Madrid Floodway, MO., First Phase

In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the Environmental Protection Agency (EPA) has reviewed the above referenced DSEIS. We appreciate the comment period extension granted by the Assistant Secretary of the Army for Civil Works. We have used that opportunity to meet frequently with you and your staff to better understand the proposed project, and we have personally visited the project area and have met with local citizens and their elected representatives to hear their concerns firsthand. I believe it is important for you to understand that EPA has spent considerable time and effort to resolve our issues since publication of the DSEIS last year, and I regret that we have not been able to reach a resolution.

Throughout this review process, we have consistently recognized the need for flood damage reduction measures for the citizens of East Prairie, and I would like to re-emphasize that we are committed to assisting East Prairie achieve that goal. Before I outline our concerns, I would like to provide a chronology of some of the more significant communications we have had regarding this matter, which are milestones to the numerous telephone conversations and exchanges of electronic mail:

March 31, 1999: DSEIS filed with EPA and distributed for public comment

Mid-June, 1999: Verbal extension of EPA comment deadline granted by the Assistant Secretary of the Army for an indefinite time period

June 25, 1999: Close of public comment period on DSEIS

July 13, 1999: EPA Meeting with Memphis District, Lower Mississippi River Valley Division, Assistant Secretary of the Army, and US Fish and Wildlife Service (FWS) at the Council on Environmental Quality (CEQ). Affirmation of indefinite extension by the Assistant Secretary of the Army

July 19, 1999: EPA transmits list of issues to Memphis District

July 26, 1999: EPA Meeting with Memphis District and FWS at the Memphis District

September 1, 1999: EPA Region 7 visit to project area and meeting with Corps Memphis District and local citizens

October 15, 1999: Water Quality Study Development Meeting at EPA Region 7, attended by Memphis District, Waterways Experiment Station, Missouri Department of Natural Resources and FWS

November 30, 1999: EPA Meeting with Deputy Assistant Secretary of the Army, Corps Headquarters and FWS at the Council on Environmental Quality

January 20, 1999: EPA Meeting with Memphis District, Waterways Experiment Station and Lower Mississippi River Valley Division at EPA Region 7

February 7, 2000: EPA Meeting with Congresswoman Emerson and Deputy Assistant Secretary of the Army, CEQ, FWS, Community Empowerment Board, and local citizens in Washington, DC

February 29, 2000: EPA visit to the project area with Deputy Assistant Secretary of the Army, Memphis District, CEQ, FWS and the Community Empowerment Board

March 3, 2000: EPA meeting with Memphis District, Lower Mississippi River Valley Division, Assistant Secretary of the Army, and at the Council on Environmental Quality

Based upon our review, we have rated the DSEIS as "EU-3" (Environmentally Unsatisfactory - Inadequate), in accordance with EPA's national rating system (an explanation of which is enclosed). This rating is based primarily on our conclusion that the proposed action (as described in the DSEIS), may result in adverse impacts to over 36,000 acres of wetlands in the Mississippi River floodplain, and that these potential adverse environmental impacts are of sufficient magnitude that we believe the action must not proceed as currently described. Our rating is also based on our conclusion that

the DSEIS should be formally revised and made available for public comment in a revised DSEIS to address the lack of information regarding potential alternatives, the scope of environmental impacts, the potential wetlands mitigation measures and the potential for continued interior flooding in the city of East Prairie after the project is implemented. We are committed to working with you to resolve our concerns and assist the Corps in developing a project that provides appropriate flood damage reduction measures and minimizes adverse environmental impacts. However, if we are unable to resolve our concerns, this matter may become a potential candidate for referral to the Council on Environmental Quality for resolution.

We believe that our position concerning this proposed project, as described, is consistent with the Administration's commitment to environmental protection. Examples of the Administration's commitment are illustrated in the recent Clean Water Action Plan calling for a net increase of 100,000 acres of wetlands per year by 2005, increasing funding for the Wetlands Reserve Program to allow farmers to generate income while at the same time protect important natural resources, and the Corps' own Challenge 21 Program which recognizes that flood damage reduction can be accomplished in concert with environmental protection goals, especially when efforts are made to look beyond the traditional approaches. I urge you to re-consider this action, as presented in the DSEIS, and to further describe how the project will provide for effective flood damage reduction for the communities of the project area while achieving these broader national goals.

Detailed comments on these concerns, and other aspects of the project are provided as an enclosure to this letter. EPA is committed to working with you and the local sponsors to resolve our concerns, and we are hopeful that you will agree to address those concerns so that further action on our part will not be required. If you have any questions or comments, please contact me or Mr. Joseph Cothorn, NEPA Team Leader at (913) 551-7148.

Sincerely,

A handwritten signature in dark ink, appearing to read "Dennis Grams", written over a horizontal line.

Dennis Grams, P.E.  
Regional Administrator

Enclosures

**United States Environmental Protection Agency - Region 7**  
**Comments to**  
**Draft Supplemental Environmental Impact Statement**  
**for Flood Control, Mississippi River & Tributaries**  
**St. Johns Bayou and New Madrid Floodway, MO.**  
**First Phase**

**Purpose and Need**

While we recognize that the project is meant to reduce flood damages in both basins, the DSEIS does not make clear what level of flood protection is desired or necessary. We suggest that the severity of impacts from flooding (both urban and agricultural) be better defined, and that discrete goals for flood damage reduction be set in order to allow for a better evaluation of how each of the project alternatives would assist in meeting those goals.

**Floodplain Management Executive Order**

Under Executive Order 11988, Floodplain Management, federal agencies shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains .

Several aspects of this project appear to be inconsistent with the policy direction set forth in the Executive Order. First, the DSEIS notes that the project area represents the only remaining floodplain connected to the Mississippi River within Missouri, and provides Missouri with many natural and beneficial values. While the DSEIS details information on the essential values and functions that the current floodplain provides, it is not clear how the loss of these functions and values is consistent with Executive Order's direction to federal agencies to restore and preserve natural and beneficial values served by a floodplain.

Second, we are concerned that encouraging development in the New Madrid Floodway may increase the risk of flood impacts to human safety, health and welfare. The New Madrid Floodway represents an important safety valve on the highly modified Mississippi River System. In 1997, opening of the floodway was considered as an option to relieve flood pressure. In contemplating this action, the Corps recognized that, 250 square miles of farmland, and 1,300 homes would be flooded , (St. Louis Post-Dispatch, March 16,

1997). Post-project conditions may foster infrastructure improvements and increased growth in the Floodway. These foreseeable actions could lessen the likelihood of the floodway being used to provide future flood relief. We suggest that forecasts of post-project conditions and potential flood management strategies that incorporate the New Madrid Floodway are needed to illustrate to the public the effects of this proposed action on not only the local project area, but also implications of changing the configuration of, or the potential for use of the Floodway for the protection of life and property outside of the project area.

Third, we are concerned that while one of the noted outcomes of the project in the DSEIS is to entice new industries and employers into the area, there still remains a level of unquantified flood damage risk from interior flooding. Most importantly, there is little, if any, discussion or graphic illustration, of what level of interior flooding will continue to occur after the project is implemented. As a result, it is not clear that this project is consistent with the Executive Order's intent that federal actions should not directly or indirectly support development activities within the 100-year floodplain.

### **Range of Alternatives**

We believe the DSEIS improperly eliminates from detailed consideration a number of reasonable alternatives (see pages SEIS-29 to SEIS-31). We strongly suggest that those alternatives be re-examined and carried through a full analysis of their environmental impacts and compared to each other in order to allow for a fully-informed decision on how to best meet the project's objectives. For example, we are concerned that the DSEIS eliminated from detailed consideration any alternative that did not include project features proposed for the New Madrid Floodway, despite the Corps conclusion that work in St. Johns Bayou Basin has independent utility and a positive benefit/cost ratio. To eliminate this alternative which the DSEIS notes is economically justified and has less environmental impacts because it leaves the most economically sound portion of the overall project unbuilt (page SEIS-30) is inappropriate. In addition to examining a project alternative that would limit work to the St. Johns Bayou Basin, we believe flood damage reduction alternatives specific to the city of East Prairie that were eliminated from detailed consideration (e.g., ring levee, improvements to interior drainage, highway upgrades) need to be re-examined and considered as reasonable alternatives in a revised Draft EIS. We also believe that alternatives that examine different locations of the levee closure need to be examined to determine if there are other locations that would reduce environmental impacts and provide opportunities for environmental restoration as well as needed flood damage reduction measures. We also suggest that other alternative features that need to be examined include: 1) an aggressive effort to reduce damages from interior flooding, 2) potential income opportunities from wetlands-based recreational opportunities (e.g., hunting leases, ecotourism), 3) other uses of wetlands as suggested in Federal publication: Alternative Uses of Wetlands Other Than Conventional Farming In

Iowa, Kansas, Missouri, And Nebraska, April, 1992.), and increased enrollments in USDA's Wetland Reserve Program.

### **Environmental Consequences**

CEQ's regulations are clear in requiring that the "environmental consequences" section of an EIS include a scientific analysis of the direct and indirect environmental effects of the proposed action and each of the alternatives. This analysis is intended to form the basis for concise comparisons of the "alternatives" section. The DSEIS for the proposed project, however, does not contain this analysis. This assessment only identifies the direct impacts that would be caused by levee closure and pumping and gives slight treatment to potential indirect impacts. For example, the DSEIS indicates that relief from flooding is desired to entice business interests to locate in East Prairie . Since this is the optimal outcome for Enterprise Community considerations, and therefore, is apparently a reasonably foreseeable consequence of project implementation, a revised SEIS needs to provide some analysis of the potential impacts of expected economic developments.

### **Economic Analysis**

EPA has concerns over the manner in which the Corps has conducted its "economic analysis" of the alternatives considered. We believe DSEIS must make an effort to evaluate the benefits of other alternatives, specifically flood-proofing by non-structural means and other reasonable alternatives. Under NEPA, even if those benefits cannot be described in monetary terms, "environmental impacts, values and amenities" must nevertheless be considered in the "weighing of the merits and drawbacks of various alternatives." (40 CFR 1502.23).

EPA believes that the analysis that supports agricultural intensification is inaccurate due to grossly applied assumptions which are applied without regard for hydrologic sensitivities and recent pesticide use restrictions that were made for the protection of surface and groundwater resources. For instance, pesticide label restrictions (for water quality protection) may preclude project expectations of shifting to corn, wheat, and double-cropping soybeans. Adjustments to yield predictions based upon pesticide use limitations (such as required setbacks from waterways and depth to groundwater provisions) may change the outcome of cost-benefit calculations. Post-project hydrologic conditions that are described by the Corps to defend a no change to wetlands status (high water table with continued ponding and saturation) continue to elicit concern in regard to pesticide usage.

### **Cumulative Impacts**

EPA believes the cumulative impacts analysis in the DSEIS is inadequate. A comprehensive analysis of cumulative (e.g., past, present and reasonably foreseeable) impacts seems particularly relevant in these proceedings given that this project is predicated (purpose and need) upon enhancing the local economy.

We are concerned about the secondary and cumulative impacts of the project on Mississippi River wetlands. The DSEIS evaluation of the indirect impacts has not thoroughly addressed the full extent of the expected effects from the entire project. Although the Memphis District states that the wetlands within the site will remain jurisdictional wetlands, we are concerned about the change in the function and value of these wetland complexes and the potential effect of the change of hydrology on community structures. Changes in hydrology can affect the aquatic community in terms of changes in current patterns and water circulation and normal water fluctuations. Increased agricultural production and ditching can increase sedimentation due to increases in erosion of adjacent lands, which can affect stream and wetland substrates, suspended particulates and turbidity, as well as organisms in the aquatic food web. Changes in hydrology can affect habitat of many species of wildlife, including neotropical migratory birds, waterfowl, shorebirds, and amphibians.

A cumulative impact evaluation must begin with an assessment of the degree to which impacts have already occurred, including impacts resulting from other types of projects in the basin. Such a baseline assessment is critical to the ability to measure significance to any amount of further impact. A comprehensive analysis of past, present and reasonably foreseeable impacts must be assessed and considered when deciding whether or not to duplicate the template of structural flood control that has led to the elimination of approximately 95% of the basin's historic habitat and floodplain functionality.

The revised draft SEIS should evaluate the contributions the proposed alternatives (and other reasonable alternatives) may have on cumulative impacts to water quality (pesticide and nutrient loadings), fish and wildlife, wetlands, habitat loss, flood attenuation, riparian areas, and recreation resources in the basin. With this in mind, a cumulative effects analysis should include, at a minimum, a discussion of the following three categories of effects:

- \* Effects of past connected and cumulative actions;
  - how and to what extent has structural flood control options impacted similar landforms
- \* Effects of present connected and cumulative actions; and
  - to what extent have adverse impacts been mitigated in the past
- \* Effects of reasonably foreseeable future connected and cumulative actions

- how and to what extent do similar projects continue to degrade naturally existing ecological systems
- to what extent would each alternative mitigate for unmitigated past, present and future impacts

The analysis should include evaluation of direct and indirect effects on all resource categories. It is important that connected and cumulative actions include federal and non-federal (even private) actions that are "reasonably foreseeable." The most effective cumulative effects analysis focuses on what the resource or ecosystem needs for long-term productivity or sustainability.

## **Wetlands**

### **Background and Concerns**

The levee closure will effectively eliminate the last remaining floodplain area connected hydrologically to the Mississippi River in Missouri. The ecological significance of this resource area has been identified under the North American Waterfowl Management Plan, and the National Wetlands Priority Conservation Plan. During the 1980's the FWS identified the New Madrid/St. Johns area as a preferred site for purchase as a national wildlife refuge primarily due its historically heavy winter use by migrating waterfowl. The FWS also identified the area as a neotropical migratory bird conservation area.

To further emphasize the importance of this area for fish and wildlife, Mississippi County has a total of 33 federal and state listed species of plants and animals that require wetland or other aquatic habitat some time during their life cycles. Only seven other counties (Butler (59); Ripley (54), Stoddard (53), Wayne (50), Dunklin (48), Shannon (38), in southeast Missouri and St. Louis (36) at the confluence of the Missouri and the Mississippi Rivers) have higher counts of such species.

The Big Oak Tree State Park is one of the special assemblages of flora and fauna in the project area. The Park has been designated as a National Natural Landmark by the U.S. Department of the Interior and is one of the only two wetland parks within the State of Missouri, and is unsurpassed by any area in the state for the size of its trees, as over 100 trees have a diameter greater than four feet and the average canopy is 120 feet. In recent years there were twelve trees within the park designated as state champion trees and four of those were registered as national champion trees. Due to recent tree mortalities within the park, only two of the national champion trees, and six of the state champion trees survive today.

In recent times there have been numerous drainage projects performed in the project area, both public and private, which have effectively altered the hydrology of the park.



Biologists have noted changes in the flora of the park due to these hydrologic changes. The wetter flora tends to be dying and replaced with species toward the drier end of the spectrum.

Changes in the vegetation correlate to the specific species using an area. In other words, if the flora changes from an obligate (OBL based on the 1988 *National List of Plants That Can Occur in Wetlands*) to facultative wetland (FACW) or facultative (FAC) species, it would be expected that there would be a corresponding shift in the species using the area. Similarly, specific species can be restricted to specific wetland habitat types (endemism), which was reflected in the draft EPA Risk Study. Some species that would use seasonally flooded wetlands would not adapt to temporarily flooded areas and vice versa. Species that utilize forested wetlands would not necessarily utilize temporarily or seasonally flooded herbaceous wetlands. For these reasons we believe that the Corps should specifically address the effects of the proposed hydrologic changes are expected to have on flora, wetland type and associated fauna.

In this respect we are concerned that the change in hydrology may result in long term changes to both floral and faunal community structures. Plant communities are very susceptible to changes in hydrology. Because certain animal species depend on specific plant communities, the potential for structure change in both plant and animal communities is high due to the proposed hydrologic alterations. Ditching and draining of agricultural areas within the project area will also alter wetland hydrology.

#### **Under-estimation of Wetland Impacts**

We are extremely concerned that the DSEIS does not correctly identify the extent the jurisdictional status of wetlands in the project area. The DSEIS bases its conclusions regarding impacts to wetlands on whether the jurisdictional status of the wetlands affected would be changed after project implementation, (i.e., if no change in jurisdictional status, the DSEIS assumes no impact to wetlands).

While we have reservations about this type of analysis itself, if this approach is to be used, it is critical that the baseline of jurisdictional wetlands is correctly identified or else the impacts will also be under-estimated. As explained below, this is a major problem with the DSEIS.

Under the Clean Water Act (CWA) regulations, prior converted croplands are not waters of the United States, and thus are not subject to CWA jurisdiction (see, 33 C.F.R. 328.3(a); 40 C.F.R. 232.2). To estimate the extent of wetlands impacts, the DSEIS indicates that nearly 26,000 acres of the wetlands that would be affected by the project are designated non-jurisdictional prior-converted croplands".

However, the DSEIS then goes on to openly acknowledge that the extent of prior - converted cropland used in its analysis significantly under-estimates the extent of jurisdictional wetlands in the project area (see page SEIS-74). Moreover, we wish to call your attention to the results of a 1997 interagency evaluation of wetlands determinations on agricultural lands in the state of Missouri conducted by the Corps Memphis District, EPA Region 7, Natural Resources Conservation Service (NRCS), and Fish and Wildlife Service. That evaluation reveals that all of the over 100,000 determinations reviewed (including determinations of prior-converted croplands) fail to meet quality standards and were not of sufficient quality for Food Security Act (FSA) purposes. Despite this documentation problem, the DSEIS continues to rely on a determination made by the Natural Resources Conservation Service in 1989 to estimate the extent of wetlands. In addition, the NRCS's 1989 determination was never certified by NRCS. Moreover, NRCS agency staff have acknowledged that if the determinations had been done subsequent to 1985, considerably more areas would have been determined to be wetlands.

We wish to point out the following specific concerns about the methodology employed by the NRCS in their 1989 wetlands inventory. That inventory employed an offsite (as opposed to on-site) methodology using a hydrologic parameter determined from a series of drought period slides from 1984 through 1989. Moreover, having a choice between using spring or summer slides, the NRCS chose to use the summer slides. Use of dry year, summer slides, is not consistent with the state mapping conventions for offsite determinations that were developed by interagency work group under the *1994 Memorandum of Agreement Among the Department of Agriculture, the Environmental Protection Agency, the Department of the Interior, and the Department of the Army Water Act and Subtitle B of the Food Security Act* (Ag MOA). The 1994 AgMOA mapping conventions were developed with interagency agreement including that of the Memphis Corps District, to ensure use of appropriate data and technically sound methods. In conclusion, because inadequate data and methods were used in the 1989 wetland inventory, the determinations likely significantly underestimate the acreage of jurisdictional wetlands in the project area, and as a result, the DSEIS would underestimate wetland impacts. Unless wetlands are more accurately determined, impacts to waters of the United States cannot be adequately assessed and appropriate mitigation cannot be determined. To correct this deficiency, an accurate determination of extent of jurisdictional wetlands is necessary. Specific methods employed to identify wetlands relative to hydrology, soils, and vegetation have been discussed in previous meetings, but included proper reliance on flood elevations, land maps, and hydric soils maps. From Corps staff it was ascertained that the soil surveys were used to include only hydric soils to meet the wetland criteria. Although hydric soils are required to meet the hydric soil criteria there are other considerations for meeting the hydric soil criteria. According to the most recent criteria for hydric soils (February 24, 1995) a soil can be considered hydric if it is frequently flooded or ponded for long (7 days to 1 month) or very long

(greater than 1 month) durations. The lower end of the spectrum of flooding was not included in the Corps determination. Inclusions of hydric soils in nonhydric soils were also not considered by the Corps and would also meet the wetland criteria. Thus, the determination performed by the Corps was very conservative in terms of existing wetlands with the project boundaries. Consistent with the mutually agreed upon mapping conventions under the 1994 AgMOA, the Corps should ensure that the areas delineated as wetlands are as accurate as possible.

### **Need to Evaluate Cumulative Impacts**

An analysis of cumulative impacts is lacking from the evaluation, especially in terms of the effects of numerous large projects of this scope within the Lower Mississippi Valley Basin. EPA is particularly concerned about the cumulative impacts of large acreages of wetlands loss or change in function, as well as the potential for associated water quality impacts on the aquatic environment.

A more comprehensive inventory is essential to determine:

- (1) the quantity of wetlands that will be impacted, and
- (2) the wetland types that may be affected by hydrologic changes as a result the project.

The fact that headwater flooding has not been fully addressed in the DEIS adds confusion to the potential impacts of the project to wetland hydrology changes and hence changes in wetland function.

### **Wetlands Impacts and Mitigation**

Until agreement on the quantity and quality of wetlands impacted by this proposed project is derived, it is difficult, if not impossible, to consider avoidance measures, mitigation values, nor candidate mitigation locations. For example, the DSEIS does not consider changes in wetland hydrology as an impact to wetlands, (i.e., conversion of wetland systems that were periodically inundated before the project to wetlands systems that are only saturated after project implementation are not considered as impacts to wetlands). Clearly, this approach does not account for the different functions provided by different types of wetlands.

As to the specific wetlands mitigation proposal presented in the DSEIS, we are concerned that the DSEIS does not provide assurances that the proposed wetlands mitigation will be implemented and successful. The location of the nearly 10,000 acres of land for proposed wetlands mitigation efforts continues to remain undefined. The success of a wetland mitigation effort relies heavily on its location in the watershed and whether a large contiguous block of land can be obtained or whether the mitigation lands

will consist instead of a series of fragmented and small tracts of land. Without that information, it is impossible to reach any conclusions on the ability of the mitigation to offset wetland impacts of the proposed project. In addition, there is no discussion of what actions will be taken if the Corps is unable to locate lands from willing sellers before the project construction is complete. Our confidence in the proposed mitigation is further eroded given current mitigation backlogs for other Corps projects in the lower Mississippi River valley, and thus we believe it is important to disclose the potential problems with mitigation on this large scale when mitigation lands have not been identified. Moreover, we note that this level of information regarding mitigation is no different than that normally required by the Corps of the thousands of permit applicants who each year seek authorization to discharge dredged or fill material into wetlands under the Clean Water Act Section 404 regulatory program. We are also concerned that the mitigation ratios for this project are not consistent with established procedures in the State of Missouri Aquatic Resources Mitigation Guidelines developed by an interagency work group of federal and state agencies, including the Memphis District Corps, so that mitigation for projects would be applied consistently to projects in the State of Missouri.

#### **Water Quality**

The DSEIS does not address the potential adverse impacts that could occur due to increased non-point source pollution contributions of the expected agricultural improvements, nor from the project's point source discharges from the large pumps. EPA acknowledges the efforts of the Memphis District and the Waterways Experiment Station in attempting to assess potential water quality impacts, however, the study that was undertaken relies on extant data obtained for differing purposes, from different hydrologic settings and at different temporal windows. Optimal pumping periods (s) for this project (Appendix J) are during periods when elevated levels of pesticides and nutrients are typically present. Procedures that the COE would employ to assess the character of these waters, and ensure compliance with effluent standards (point source discharge through a man-made contrivance) have not been described in the DSEIS.

On April 23, 1999, EPA Region 7 approved the list of impaired waters developed by the Missouri Department of Natural Resources pursuant to Section 303(d) of the Clean Water Act. Missouri has listed the entire reach of the Mississippi River along the state border as an impaired water with the pollutant listed as loss of habitat and the source of the pollution as channelization. Also listed as impaired within the St. Johns Bayou/New Madrid Basin is Spillway Ditch, which is listed as impaired from sedimentation with the pollutant source listed as agricultural nonpoint source. A revised SEIS should address potential changes in the 303(d) status of: 1) the Spillway Ditch, 2) the project's reach of the Mississippi River in Missouri; and, 3) waters downstream from the State which may also be impaired, and may be further impaired by project induced pollutant contributions.

According to the EPA's Index of Watershed Indicators (IWI) (last revised 3/2/1999) the New Madrid-St. Johns Basin is rated as a 5" which indicates more serious problems with water quality. The serious loss of wetlands and the high vulnerability of the area for agricultural runoff are the primary reasons for water quality concerns in this area. Wetlands are known to remove or immobilize many pollutants, aiding in water quality maintenance. Plants, through their normal growth cycles, remove such nutrients as nitrogen and phosphorous. Thus, these wetland areas are capable of removing nutrients from runoff waters.

Additional cumulative losses of wetland habitat not only in the St. Johns/New Madrid Basin, but other similar large projects in the Lower Mississippi Basin increase the potential for noncompliance with state water quality standards. Anti-degradation laws are likely to be impacted due to the loss of existing use for aquatic species use. Threatened and endangered species are particularly at risk because of specific habitat loss. Added turbidity and nutrient and pesticide loading as a result of wetland functional losses may have significant cumulative impacts on a wide range of aquatic species.

The cumulative impacts of many such large projects also has a potential for significant impacts on the Lower Mississippi Valley Basin. If EPA has concerns regarding the potential effects of a project on the quality of waters of any state other than the state in which the discharge originates, pursuant to 33 CFR 325.2(b), EPA may request such information subsequent to issuance of a public notice. The Memphis District Corps verbally informed Region 7, EPA on May 19, 1999, that the DSEIS is to serve as the public notice for the project. The DSEIS does not state that it is to serve as a public notice, and is not consistent with previous actions of the Memphis Corps, which has issued specific public notices on the other portions of the project.

In an April 9, 1999 letter, the Memphis Corps District requested water quality certification from the State of Missouri. Due to an extension granted for public comment on the DSEIS until June 25, 1999, the Memphis Corps has extended the time frame to the state for granting water quality certification until ten days subsequent to June 25, 1999. On July 2, 1999, the Missouri Department of Natural Resources issued water quality certification that the Memphis Corps considered inconsistent with both project impacts and our (Corps) authority to implement those conditions (Col. Krueger letter to Ed Knight, MDNR, July 30, 1999). The Missouri Department of Natural Resources rescinded the water quality certification on August 26, 1999 on the basis that additional analysis would be forthcoming from the Corps prompted by MDNR's comments to the DSEIS. In light of the fact that the direct, indirect and cumulative impacts of the project have not been adequately evaluated, EPA does not believe that it is reasonable for the State of Missouri to provide certification pursuant to Section 401 of the Clean Water Act without a complete identification of impacts on the aquatic environment.

EPA is concerned about the cumulative effects of projects on the aquatic environment in the Gulf of Mexico, which is currently being impacted by excess upstream nutrient loading (especially nitrogen and phosphorous) that has created a significant hypoxic zone, where low levels of dissolved oxygen during the summer months adversely affects aquatic species. Consideration of these loading, transport and assimilation relationships is especially important to note in light of the fact that the entire length of the Mississippi River transiting Missouri is listed in the State of Missouri's CWA 303(d) list of impaired waters. This hypoxic zone has doubled in size since 1993, and could potentially have a significant effect on the Gulf of Mexico fisheries, which could affect regional and national economics. Hypoxia can be attributed to the transportation of nutrients through a complicated interaction of such impacts as channelization, loss of wetland habitat, and loss of vegetation along stream and river banks.

**Compliance with the Section 404(b)(1) Guidelines:**

Unless a more comprehensive wetland delineation is performed, compliance with the 404(b)(1) Guidelines cannot be adequately determined. In order to determine impacts, one must first assess what is being impacted. Without a more comprehensive inventory, it is impossible to determine (1) the quantity of wetlands that will be impacted, and (2) wetland types and functionality that may be affected by hydrologic changes as a result of the project. Without this basic information as to the acreage and types of wetlands impacted it is impossible to determine whether the impacts can be avoided, minimized or mitigated.

To comply with the Guidelines the Corps must generally analyze the direct, indirect, and cumulative impacts to wetlands and the aquatic ecosystem. The analysis of the Guidelines provided by the Corps in Appendix G does not adequately evaluate Subparts C through F of the Guidelines. According to 40 CFR 230.12(a)(3)(iv) non-compliance with the Guidelines is met if there does not exist sufficient information to make a reasonable judgement as to whether the proposed discharge will comply with the(se) Guidelines.